

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P915856

Luminaire Tested: DFN2DIP-4P3F0-040D020US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915856
REPORT IS A COMBINATION OF REPORTS P899034 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-040D020US930-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

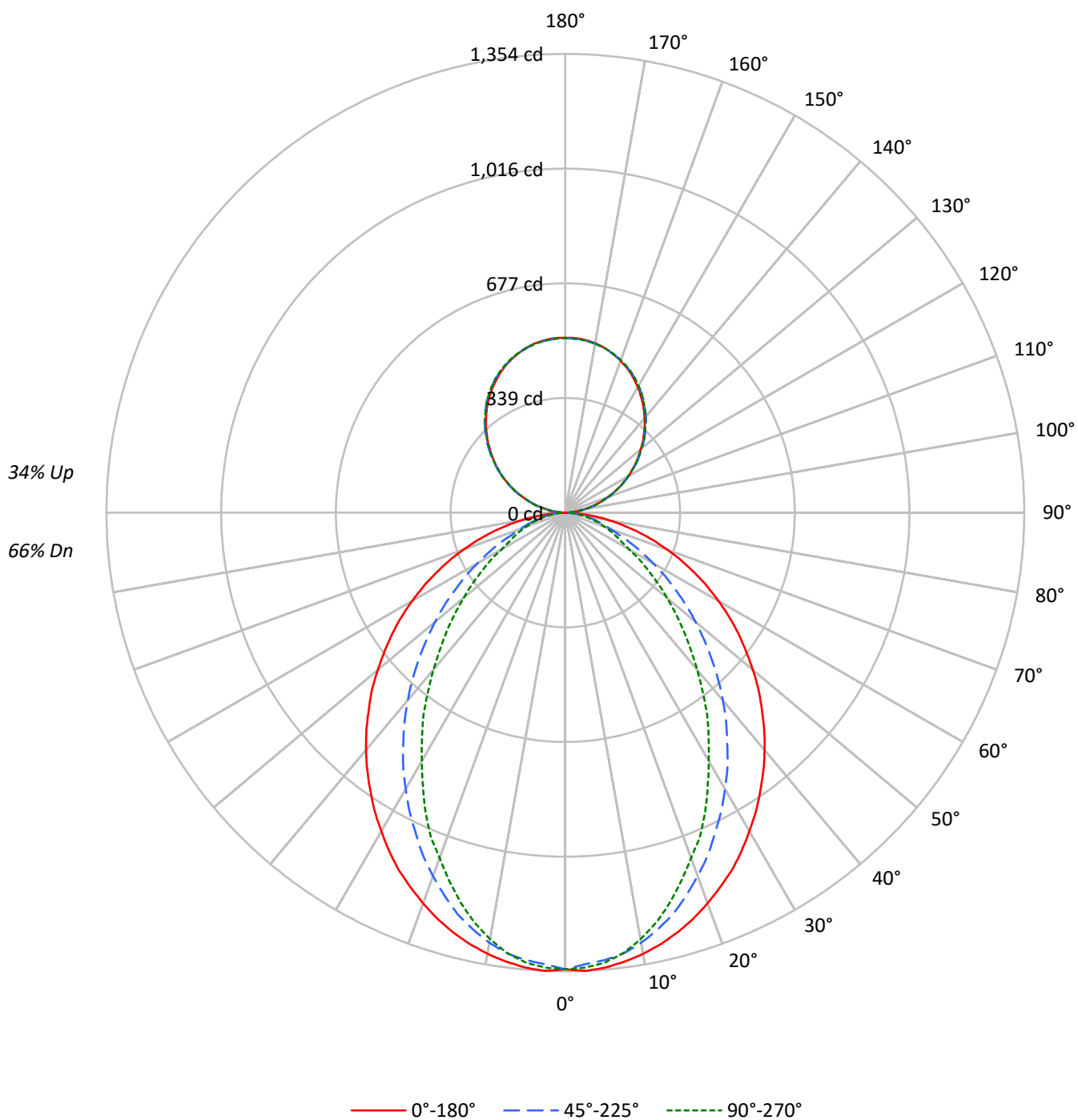
Lumens per Lamp: N/A
Luminaire Lumens: 4215.1 lumens
Efficiency: N/A
Efficacy: 79.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 53
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P915856

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US930-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P915856

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US930-RLLFLL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71
1	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1536	1536	1536
5°	1538	1511	1521
10°	1521	1480	1471
15°	1499	1430	1394
20°	1471	1362	1300
25°	1441	1285	1209
30°	1402	1207	1093
35°	1364	1123	992
40°	1325	1036	876
45°	1279	940	771
50°	1232	843	668
55°	1183	739	570
60°	1126	631	469
65°	1061	521	421
70°	981	419	380
75°	881	367	345
80°	736	304	298
85°	499	199	221

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1279 cd/sqm

TEST NUMBER: P915856

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US930-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.3	3.0
10°-20°	346.8	8.2
20°-30°	486.9	11.6
30°-40°	530.7	12.6
40°-50°	487.8	11.6
50°-60°	383.1	9.1
60°-70°	249.3	5.9
70°-80°	128.4	3.0
80°-90°	34.2	0.8
90°-100°	31.9	0.8
100°-110°	101.4	2.4
110°-120°	173.5	4.1
120°-130°	228.2	5.4
130°-140°	256.1	6.1
140°-150°	251.2	6.0
150°-160°	210.7	5.0
160°-170°	139.7	3.3
170°-180°	48.8	1.2
0°-30°	960.0	22.8
0°-40°	1490.7	35.4
0°-60°	2361.5	56.0
0°-90°	2773.5	65.8
90°-120°	306.8	7.3
90°-150°	1042.3	24.7
90°-180°	1442.0	34.2
0°-180°	4215.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1348	1348	1348	1348	1348	
5°	1348	1342	1326	1337	1333	128
15°	1282	1268	1227	1204	1192	361
25°	1164	1125	1044	994	976	535
35°	1003	940	833	756	729	628
45°	820	738	610	523	494	633
55°	623	528	396	323	300	557
65°	421	322	212	171	167	417
75°	224	139	98	89	88	237
85°	52	27	23	23	23	60
90°	0	6	15	14	15	4
95°	23	27	28	28	27	25
105°	94	95	96	96	96	99
115°	174	177	176	175	174	172
125°	253	257	256	254	254	226
135°	328	332	333	333	332	253
145°	398	401	403	404	402	248
155°	455	456	457	460	458	209
165°	495	494	494	497	495	140
175°	515	514	513	516	513	49
180°	516	516	516	516	516	

TEST NUMBER: P915856

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US930-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1347.9	1347.9	1347.9	1347.9	1347.9
2.5°	1354.0	1347.9	1334.4	1346.7	1344.2
5°	1347.9	1341.7	1325.8	1336.8	1333.3
7.5°	1336.8	1329.6	1312.5	1317.3	1311.2
10°	1322.3	1313.7	1289.3	1285.6	1278.4
12.5°	1304.0	1293.0	1260.0	1252.7	1239.3
15°	1282.0	1268.5	1227.1	1204.0	1191.8
17.5°	1256.4	1236.8	1185.5	1158.8	1139.2
20°	1227.1	1202.6	1141.7	1111.3	1084.3
22.5°	1195.4	1167.3	1096.5	1055.1	1036.9
25°	1163.7	1124.6	1044.1	994.2	975.7
27.5°	1125.9	1084.3	995.3	938.0	909.9
30°	1085.7	1039.2	941.6	879.5	846.5
32.5°	1046.6	990.4	890.5	817.3	786.7
35°	1002.7	940.4	833.2	756.3	729.4
37.5°	960.0	892.8	779.4	695.2	664.8
40°	914.8	841.7	723.3	636.7	605.0
42.5°	868.5	790.4	667.2	576.9	546.5
45°	819.7	737.9	609.9	523.3	494.0
47.5°	773.4	686.8	555.1	468.4	441.6
50°	722.1	635.5	501.3	417.1	391.6
52.5°	672.1	580.6	450.1	369.6	346.4
55°	623.3	528.2	396.4	323.3	300.1
57.5°	573.3	475.7	348.9	280.5	261.1
60°	522.0	424.4	298.8	236.7	217.2
62.5°	472.1	374.5	256.1	197.6	187.9
65°	420.9	322.0	212.2	170.8	167.1
67.5°	372.1	273.2	170.8	150.0	146.3
70°	320.8	225.7	141.5	129.3	124.3
72.5°	272.1	181.7	118.3	108.6	106.2
75°	224.4	139.0	97.6	89.0	87.9
77.5°	176.9	98.7	76.9	72.0	69.5
80°	132.9	70.8	58.5	53.7	53.7
82.5°	92.7	47.6	40.3	37.7	37.7
85°	52.4	26.8	23.2	23.2	23.2
87.5°	19.6	9.7	9.7	8.6	8.6
90°	0.5	5.6	15.2	14.3	14.8
92.5°	9.6	13.0	13.5	14.0	14.0
95°	22.7	27.1	27.8	27.8	27.1
97.5°	37.7	41.8	43.5	43.5	43.5
100°	55.2	58.8	60.0	60.0	59.5
102.5°	73.5	76.1	77.9	78.4	77.9
105°	93.6	94.8	95.8	96.5	96.5
107.5°	113.5	115.4	115.4	115.7	113.5
110°	132.8	135.3	135.3	135.3	134.0

TEST NUMBER: P915856

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US930-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	153.6	156.2	155.8	154.5	153.6
115°	174.1	176.6	175.9	175.4	174.1
117.5°	194.5	198.0	195.8	194.5	193.2
120°	215.0	218.4	215.0	215.0	213.6
122.5°	233.7	238.0	235.9	234.6	233.7
125°	253.2	257.1	255.9	254.5	254.0
127.5°	272.4	277.2	275.5	273.6	272.4
130°	290.2	295.9	295.1	294.2	292.4
132.5°	310.3	314.7	314.9	312.8	311.5
135°	327.6	332.4	333.3	332.9	331.6
137.5°	346.8	350.7	351.6	351.2	349.4
140°	363.8	367.7	369.9	369.9	368.2
142.5°	381.2	385.1	386.4	386.8	385.1
145°	397.7	400.8	403.3	403.7	402.0
147.5°	412.5	416.4	418.2	419.0	417.3
150°	427.7	430.3	432.0	433.4	432.0
152.5°	441.2	443.8	446.0	447.8	446.0
155°	454.8	456.0	457.4	459.6	458.2
157.5°	466.4	467.3	468.1	471.2	469.0
160°	476.9	477.8	478.3	480.9	479.0
162.5°	486.5	486.5	486.9	489.9	487.7
165°	494.7	494.2	494.2	497.3	495.2
167.5°	502.1	500.8	500.8	503.9	501.7
170°	507.8	506.5	506.1	509.2	506.5
172.5°	511.7	510.4	510.0	513.1	510.4
175°	514.8	513.6	512.6	515.7	513.1
177.5°	516.5	515.3	514.3	516.9	514.3
180°	515.7	515.7	515.7	515.7	515.7



TEST NUMBER: P915856

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US930-RLLFLL

CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	9.96	10.94	10.78	11.78	12.81	5.92	6.90	6.74	7.74	8.77
	3H	11.65	12.52	12.48	13.37	14.42	7.12	7.99	7.95	8.84	9.89
	4H	12.26	13.09	13.11	13.94	15.01	7.57	8.40	8.42	9.25	10.32
	6H	12.69	13.45	13.55	14.30	15.39	7.89	8.65	8.75	9.51	10.59
	8H	12.82	13.54	13.68	14.41	15.50	7.99	8.71	8.85	9.58	10.67
	12H	12.88	13.57	13.75	14.44	15.54	8.03	8.72	8.90	9.59	10.70
4H	2H	10.00	10.82	10.85	11.67	12.74	6.54	7.36	7.39	8.21	9.28
	3H	11.84	12.52	12.70	13.41	14.49	7.89	8.58	8.75	9.46	10.54
	4H	12.53	13.15	13.40	14.03	15.15	8.44	9.06	9.31	9.94	11.06
	6H	13.05	13.59	13.94	14.49	15.61	8.86	9.40	9.75	10.30	11.42
	8H	13.23	13.73	14.12	14.63	15.75	8.99	9.49	9.88	10.39	11.52
	12H	13.32	13.78	14.24	14.69	15.83	9.06	9.51	9.97	10.43	11.56
8H	4H	12.51	13.01	13.40	13.91	15.04	8.73	9.23	9.62	10.13	11.26
	6H	13.07	13.49	13.99	14.43	15.56	9.24	9.66	10.16	10.60	11.73
	8H	13.29	13.66	14.22	14.59	15.73	9.43	9.80	10.36	10.73	11.87
	12H	13.43	13.75	14.36	14.68	15.87	9.55	9.87	10.48	10.80	11.99
12H	4H	12.47	12.92	13.38	13.84	14.97	8.74	9.19	9.65	10.11	11.24
	6H	13.05	13.42	13.98	14.35	15.49	9.29	9.66	10.22	10.59	11.74
	8H	13.27	13.60	14.20	14.52	15.72	9.50	9.83	10.43	10.75	11.95